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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/873,127      | 06/01/2001  | Brian E. Lemoff      | AT10004209-1        | 3243             |

7590 03/10/2004  
AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 9

Application Number: 09/873,127  
Filing Date: June 01, 2001  
Appellant(s): LEMOFF ET AL.

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Michael H. Jester  
For Appellant

**MAILED**  
MAR 10 2004  
**GROUP 2800**

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed October 31, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is substantially correct.

The changes are as follows: In view of the appellant's arguments set forth in the appellate brief, the ground of rejection for claims 20 and 26-28 is hereby withdrawn.

The appellant's statement of the issues is otherwise correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

|               |                 |        |
|---------------|-----------------|--------|
| 5,664,034     | MOCK            | 9-1997 |
| JP 06258584 A | KOBAYASHI ET AL | 9-1994 |

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-2, 4-5, 8, 11-12, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (JP 06-258584) in view of Mock (US 5,664,034).

Kobayashi et al reference discloses a fiber optic matrix switch with all the limitations set forth in the claims, except it does not teach the use of collimating lens.

Specifically, Kobayashi et al teach: N input and M output optical fibers (Fig. 1); a first plurality of stages each supporting an end portion of a corresponding one of the N optical fibers in ferrules; a second plurality of stages each supporting an end portion of a corresponding one of the M optical fibers in ferrules (Fig. 1); means for translating the stages along a plurality of overlapping paths to align a facet of a selected one of the N input optical fibers with a facet of a selected one of the M output optical fibers (abstract); wherein fibers are translated orthogonal X and Y axis (Fig. 1); wherein N=M (Fig. 4) re Claims 4, 16; means for moving the end portions of at least some of the optical fibers along a plurality of Z axes perpendicular to the X and Y axes to mate and un-mate the facets of the input and output fibers (See "17" in Fig. 1); a connecting plate having plurality of holes and connecting sleeves (Fig. 1 and abstract); means for controlling and

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fine-tuning the movement of the actuator for positioning the fiber ferrule (paragraph 0026-0029).

The use of collimating lens between input and output fibers is commonly known in the fiber switching art as shown by Mock. Regarding Claims 1, 11 and especially Claims 5, Mock teaches a fiber optic movable switching device having collimating lens disposed at the fiber termination point (column 5 lines 45-57). Mock teaches that the use of collimating lens is advantageous because it improves optical coupling between the input and output fibers. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Kobayashi et al device to have collimating lens between input and output fibers.

**(11) Response to Argument**

**35 U.S.C. §103(a) Rejection of Claims 1-2, 4-5, 8, 11-12, 16-18.**

Appellant asserts "The examiner's proposed combination defeats the fundamental design of the Kobayashi et al switch..." (page 5) Appellant further asserts "The Kobayashi et al switch depends on close-proximity Z-axis movement and mating of the input and output fiber ends and has *no need* for the lenses **26** of '034 Mock." (page 5- emphasis added) Appellant reasons that "The lenses **26** of '034 Mock collimate light from input fibers **27** and carry it a substantial longitudinal distance through free space to photodetectors **34**." (page 5) Appellant concludes that "There is no express or implied suggestion in Kobayashi et al or '034 Mock to modify the Kobayashi et al switch as

proposed by the examiner. Moreover, a motivation to combine the teachings of prior art references require desirability of making the proposed combination..." (pages 5-6)

The examiner respectfully disagrees with the appellant and maintains the ground of rejection provided in the Final Office Action. First, the examiner respectfully disagrees with the appellant's conclusion that the Kobayashi et al's optical switch has "no need" for collimating lenses of '034 Mock. Appellant correctly states that the Kobayashi et al's optical switch depends on the proximity of input and output fibers for optical coupling (see abstract). However, the appellant incorrectly concludes that '034 Mock discloses collimating lenses for optical coupling through "substantial longitudinal distance." As discussed in the Final Office Action, '034 Mock discloses the use of collimating lens in a fiber optic movable switching device (column 5 lines 45-57, also see Fig. 1).- Figure 1 and Figure 5 of the '034 Mock reference clearly discloses that the coupling between the input fibers **27** and the output fiber **31** depend on the proximity of these fibers created by a movable switching mechanism (Fig. 6). Both the input fiber ends **26** and the output fiber end **29** are provided with collimating Graded Index Lens (GRIN lens) (column 5 line 45- column 6 line 9). Further more, the distance between the two ends are kept at a "small distance" to minimize optical loss (column 6 lines 1-9). In addition, '034 Mock teaches that the use of collimating lenses are advantageous and desirable because it improves optical coupling between input and output fibers (column 3 lines 34-42).

Therefore, '034 Mock teaches that even in a fiber optic coupling arrangement that depends on a close proximity of input and output fibers, collimating lenses may

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advantageously be used to ensure minimal coupling loss between the fibers. Turning back to the Kobayashi et al reference, the appellant correctly stated that Kobayashi et al's switch depend on the proximity of input and output fibers. '034 Mock reference, however, clearly demonstrates the desirability of disposing collimating lenses even in a "close" input/output fiber coupling arrangement as discussed above. Since the motivation and desirability to modify Kobayashi et al's switching device are suggested by '034 Mock, the claimed limitations are obvious over Kobayashi et al's disclosure in view of '034 Mock.

**35 U.S.C. §103(a) Rejection of Claims 20, 26-28.**

In view of the arguments set forth in the appellate brief, claims 20, 26-28 are allowable and the ground of rejection for these claims is withdrawn by the examiner.

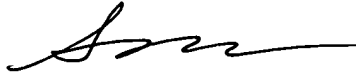
For the above reasons, it is believed that the rejections of claims 1, 2, 4-5, 8, 11-12, 16-18 should be sustained.

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Respectfully submitted,

Sung H. Pak  
Examiner  
Art Unit 2874



SP  
February 24, 2004

Conferees  
Rodney Bovernick  
Olik Chaudhuri 



HEMANG SANGHAVI  
PRIMARY EXAMINER

AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599